

IN THE SPECIFICATION:

Page 6, please amend the paragraph beginning at line 18 as follows:

An embodiment of the present invention is shown in Fig. 5. A sample (a wafer) 1 contained in a wafer-cassette 41 is transported to a Z-stage 10, a θ -stage 11, an X-stage 12 and a Y-stage 13 by a wafer transporting robot 40 of a system 45. The wafer 1 that has been transported to any one of the stages is moved into a field of view of a sub-optical system 20 having low magnification for detection in an entire chip area to detect an image of the entire chip area. Then, the chip image being divided into a peripheral circuit 2a1, a logic part 2a2, a memory part 2a3 and the like, is captured by a camera 21 in the sub-optical system 20. This image is transferred to an image processing section 30. This image is stored in a data server 31. The system is configured so that this image may be shown on a display of an operating computer 35 in this inspection apparatus. Therefore, the operating computer 35 can select a region (a peripheral circuit part 2a1, a logic part 2a2, a memory part 2a3 and the like) to acquire an image for conditioning the transmission ratio (I_b/I_a) of the 0-th order diffracted light, on the display. The sub-optical system 20 for detection in an entire chip area is provided a polarizing conditions adjusting section 201 which comprises a PBS and a half wave plate or a quarter wave plate, and an objective lens 2.

Page 8, please amend the paragraph beginning at line 6 as follows:

The optical system 15 using in the actual inspection is formed by coaxial bright field epi-illumination system. Then, the optical system 15 is provided with an objective lens 151, a half wave plate or a quarter wave plate 152, a drive motor 156 for adjusting minute rotation of the wave plate 152, a belt 157 for transferring an rotation output of the drive motor to the minute rotation of the wave plate 152, a PBS (polarizing beam splitter) 153, an image sensor 154 for imaging each region and a

light source 155. The light source 155 is formed by a laser source such as a semiconductor laser, an argon laser, a YAG-SHG laser or an exima laser, or a discharge tube such as a xenon lamp, or a mercury lamp, or a filament light source such as a halogen lamp. The image sensor 154 is formed by a TDI image sensor or a CCD image sensor. The PBS 153 converts by reflecting a light outputted from the light source 155 to a linear polarized light. Further, the wave plate 152 converts the linear polarized light to an elliptically polarized light. Therefore, the elliptically polarized light is irradiated by focusing through the objective lens 151 on the region of the wafer 1.

Page 11, please amend the paragraph beginning at line 23 as follows:

Fig. 2 shows appearance of a wafer to be inspected. On the wafer 1, a similar pattern is formed in every die (chip) 2. For example, in semiconductor products in which memory and logic circuits are combined, each die region of a representative chip 2a of the chips 2, as shown, is divided into a peripheral circuit part 2a1, a logic part 2a2, a memory part 2a3 and the like. A width and a density of the pattern formed in each region usually varies. Here, assume the pattern width and pattern density of each region (part) as follows: (i) the peripheral circuit part 2a1 has a large pattern width and a low pattern density; (ii) the logic part 2a2 has a fine pattern width but a relatively low pattern density; and (iii) the memory part 2a3 has a fine pattern width and a high pattern density.

Page 12, please amend the paragraph beginning at line 12 as follows:

Fig. 3 shows an example of an image obtained from the die region of the representative chip 2a by conventional bright field detection. Considering distribution of detected light quantity (intensity) in a range A-A of the detected image, it can be found that the peripheral circuit part 2a1 having the large pattern width and the low

density shows high pattern modulation M1. The memory part 2a3 having the fine pattern width and the high density is generally detected darkly and has low modulation M3. In addition, M2 shows modulation in the logic part 2a2. Such generally dark detection of the memory part 2a3 results from reduction of ratios of the 0-th order light and the higher order diffracted light captured by an objective lens. In a defect inspection, a difference between images of adjacent dies is firstly acquired by difference image calculating section 64, and then points having values beyond a threshold are determined as defects by defect determining section 65. Therefore, inspection sensitivity is reduced in a region (part) having low modulation of the detected image. Thus, in order to have uniform defect detection sensitivity, it is desirable that the modulation (contrast) is equal in the entire die region irrespective of the pattern width and the pattern density.

Page 13, please amend the paragraph beginning at line 10 as follows:

Fig. 4 shows a detected image of the representative chip 2a when the transmission ratio of the 0-th order light is set to approximately 40%. Considering the fact that the low contrast (modulation) in the memory part 2a3 results from a reduced converging ratio of the higher order diffracted light by the objective lens 151 (2), it is possible to detect the amplitude of the 0-th order light and the higher order diffracted light equally and to improve the modulation M31 due to interference by reducing the 0-th order light. Further, with the reduced 0-th order diffracted light, the modulation M11 of peripheral circuit part 2a1 having a large pattern width shows a lower intensity (brightness) level as compared to the one before the reduction of the 0-th order light. In addition, M21 shows modulation in the logic part 2a2. Thus, it is possible to improve the contrast in regions having a fine pattern width by reducing the 0-th order light, though at this time it is necessary to increase an illumination light quantity as the detection ratio of the light quantity decreases as a result of the

reduced 0-th order light. Accordingly, the inspection sensitivity in the parts having a fine pattern can be improved.

Page 17, please amend the paragraph beginning at line 10 as follows:

Fig. 7 shows a schematic diagram of an image region 50 that is acquired for conditioning the transmission ratio of the 0-th order diffracted light. If the pattern width and the pattern density in the die can be divided into a plurality of segments, it is desirable that each of the segments includes regions that correspond to every pattern width and pattern density that may be observed in the die. However, if there is no preliminary information used for the segmentation, it may be contemplated to set a central field of the die as a default segment, and the like. Alternatively, the image that has been acquired by the optical system for detection in an entire chip area 20 may be used to determine the image-acquiring region.